

### REMARKS

Claims 2 and 16 have been canceled. Claims 29-32 have been added. Claims 1 and 15 have been amended to more distinctly claim and particularly point out the subject matter of the present invention. Thus, claims 1, 3-15 and 16-32 are now pending in the present application. No new matter has been added. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 1-4, 6-18 and 20-28 have been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,363,933 to Berthon-Jones et al. in view of U.S. Patent No. 6,409,676 to Ruton et al. 12/6/04 Office Action, p. 2.

Claim 1 recites a positive airway pressure system for treatment of a sleeping disorder in a patient comprising "a generator supplying airflow and applying a pressure to an airway of a patient" and "a sensor measuring data corresponding to patient's breathing patterns" in combination with "a processing arrangement analyzing the breathing patterns to determine whether the breathing patterns are indicative of one of the following patient's states: (i) a regular breathing state, (ii) a sleep disorder breathing state, (iii) a REM sleep state and (iv) a troubled wakefulness state, the processing arrangement adjusting the applied pressure as a function of the patient's state" and *"wherein, when the breathing patterns indicate one of states (i) and (ii) and (iii), the processing arrangement controls the generator to adjust the pressure to a first value and wherein, when the breathing patterns indicate state (iv), the processing arrangement controls the generator to adjust the pressure to a second value."*

The Examiner has stated that Berthon-Jones shows the present invention substantially as claimed, but fails to recite analyzing the breathing patterns to determine whether the breathing patterns are indicative of the following patient's states: a regular breathing state, a sleep disorder breathing state, a REM breathing sleep state, and a troubled wakefulness state.

12/6/04 Office Action, p. 3. The Examiner further states that Ruton cures the deficiencies of Berthon-Jones, in that Ruton "teaches or suggests analyzing breathing patterns to determine the different patient states as claimed." *Id.* at p. 3. The Examiner asserts that one of skill in the art would be motivated to combine the teachings of Berthon-Jones with those of Ruton to diagnose respiratory disorders and provide proper treatment thereof.

It is respectfully submitted that Ruton does not cure the deficiencies of Berthon-Jones, because Ruton does not disclose or suggest identifying either a REM sleep state or a troubled wakefulness state. Without identifying the REM sleep state or the troubled wakefulness state, Ruton cannot teach or suggest adjusting the pressure supplied to the patient based on these states. The Examiner has asserted that the identification of "at least" one state in Ruton suggests that its system may be used to identify further states. However, there is no teaching or suggestion of this in Ruton. In fact, the disclosure in Ruton regarding "at least one state" refers to a combination of two fuzzy variables,  $A_{\text{buccal}}^f$  and  $A_{\text{nasal}}^f$ , which yields a phase of respiration. More than one combination (e.g., different values) of the fuzzy variables may indicate a normal phase of respiration state. *Ruton*, col. 11, lines 19-51. However, there is no disclosed combination which would indicate either a REM sleep state or a troubled wakefulness state.

Thus, it is respectfully submitted that neither Berthon-Jones nor Ruton, either alone or in combination, discloses or suggests "*wherein, when the breathing patterns indicate one of states (i) and (ii) and (iii) (i.e., a REM sleep state), the processing arrangement controls the generator to adjust the pressure to a first value and wherein, when the breathing patterns indicate state (iv) (i.e., a troubled wakefulness state), the processing arrangement controls the generator to adjust the pressure to a second value,*" as recited in claim 1. Because claims 3-4 and 6-14 depend from, and therefore include all of the limitations of claim 1, it is respectfully submitted that these claims are allowable for the same reasons as stated above.

Claim 15 recites a method for treatment of sleeping disorder in a patient using a positive airway pressure comprising "supplying an airflow to an airway of a patient using a flow

generator” and “measuring data corresponding to the patient’s breathing patterns” in combination with “analyzing with the processing arrangement the data corresponding to the breathing patterns to determine whether the breathing patterns are indicative of at least one of the following patient states: (i) a regular breathing state, (ii) a sleep disorder breathing state, (iii) a REM sleep state, and (iv) a troubled wakefulness state” and “using the processing arrangement, controlling the generator to adjust the supplied pressure as a function of the patient’s state” in combination with *“when the breathing patterns indicate one of states (i) and (ii) and (iii), controlling the generator to adjust the supplied pressure to a first value”* and *“when the breathing patterns indicate state (iv), controlling with the processing arrangement the flow generator to adjust the supplied pressure to a second value.”*

Claim 15 includes substantially the same limitations as claim 1, and therefore, for the reasons discussed above, it is respectfully submitted that claim 15 is allowable. Because claims 17-18 and 20-28 depend from, and therefore include all of the limitations of claim 15, it is respectfully submitted that these claims are allowable for the reasons stated above.

Claims 5 and 19 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Berthon-Jones in view of Ruton in further view of U.S. Patent No. 6,171,258 to Karakasoglu et al. (See 12/6/04 Office Action, p. 5).

Applicants respectfully submit that Karakasoglu does not cure the above-mentioned deficiencies of Berth on-Jones and Ruton. Specifically, Karakasoglu does not disclose or suggest *“wherein, when the breathing patterns indicate one of states (i) and (ii) and (iii), the processing arrangement controls the generator to adjust the pressure to a first value and wherein, when the breathing patterns indicate state (iv), the processing arrangement controls the generator to adjust the pressure to a second value,”* as recited in claim 1, or *“when the breathing patterns indicate one of states (i) and (ii) and (iii), controlling the generator to adjust the supplied pressure to a first value”* and *“when the breathing patterns indicate state (iv), controlling with the processing arrangement the flow generator to adjust the supplied pressure*

to a second value" as recited in claim 15. Because claims 5 and 19 depend from, and therefore include all of the limitations of claims 1 and 15, respectively, it is respectfully submitted that these claims are allowable for the reasons stated above with regard to claims 1 and 15.

New claim 29 recites a positive airway pressure system for treatment of a sleeping disorder in a patient comprising "a generator supplying airflow and applying a pressure to an airway of a patient" and "a sensor measuring data corresponding to patient's breathing patterns" in combination with "a processing arrangement analyzing the breathing patterns to determine whether the breathing patterns are indicative of one of the following patient's states: (i) a regular breathing state, (ii) a sleep disorder breathing state, and one of (iii) a REM sleep state and (iv) a troubled wakefulness state." It is respectfully submitted that new claim 29 is allowable, because neither Berthon-Jones nor Ruton, either alone or in combination, discloses or suggests "a processing arrangement analyzing the breathing patterns to determine whether the breathing patterns are indicative of the following patient's states: (i) a regular breathing state, (ii) a sleep disorder breathing state, and one of (iii) a REM sleep state and (iv) a troubled wakefulness state" for the reasons stated above.

New claim 30 recites substantially similar limitations as claim 29, including "analyzing with the processing arrangement the data corresponding to the breathing patterns to determine whether the breathing patterns are indicative of the following patient states: (i) a regular breathing state, (ii) a sleep disorder breathing state, and one of (iii) a REM sleep state and (iv) a troubled wakefulness state." Thus, it is respectfully submitted that new claim 30 is allowable for the reasons stated above.

New claim 31 recites a positive airway pressure system for treatment of a sleeping disorder in a patient comprising "a generator supplying airflow and applying a pressure to an airway of a patient" and "a sensor measuring data corresponding to patient's breathing patterns" in combination with "a processing arrangement determining whether the breathing patterns are indicative of a troubled wakefulness state, the processing arrangement adjusting the applied

pressure as a function of the state.” It is respectfully submitted that new claim 29 is allowable, because neither Berthon-Jones nor Ruton, either alone or in combination, discloses or suggests *“a processing arrangement analyzing the breathing patterns to determine whether the breathing patterns are indicative of a troubled wakefulness state, the processing arrangement adjusting the applied pressure as a function of the state.”*

New claim 32 recites substantially the same limitations as claim 31, including “determining, based on the data, whether the breathing patterns are indicative of a troubled wakefulness state.” It is respectfully submitted that for the same reasons as stated above with regard to claim 31, claim 32 is allowable.

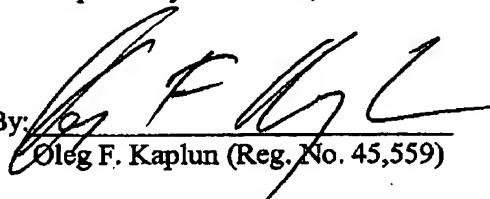
**CONCLUSION**

In light of the foregoing, Applicants respectfully submit that all of the now pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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